Bean Cowpea CRSP Training Report 1997-2002

Developing the Human Factor

October 2001

This publication was made possible through support provided by the Office of Agriculture and Food Security, Economic Growth Center, Global Bureau, U.S. Agency for International Development, under the terms of Grant No. DAN-G-SS-86-00008-00. The opinions expressed herein are those of the authors and do not necessarily reflect the views of the U.S. Agency for International Development.

THE BEAN/COWPEA COLLABORATIVE RESEARCH SUPPORT PROGRAM (CRSP)

An international community of persons,
institutions, agencies and governments committed
to collectively strengthening health and nutrition in
developing countries by improving the availability
and utilization of beans and cowpeas.

Bean/Cowpea CRSP
200 International Center
Michigan State University
East Lansing, Michigan 48824-1035, U.S.A.
Phone: (517) 355-4693
Fax: (517) 432-1073

Table of Content

Developing the Human Factor
Introduction 1

Degree Training During the Five-Year Grant Extension Phase (1997 To 2002)
Global Overview 4
Number and Level of Degrees Earned by Region of Origin 4
Training by Gender and Discipline 4
Training Location 5

CRSP Degree Training by Regional Projects
Resources Allocated to Degree Training 7
Number of Degrees Supported by Years 7
Indicators of Degree Training Outputs 8
Discipline and Gender Analysis 10

Non-Degree Training During the Five-Year Grant Extension Phase (1997 to 2002)
Global Overview 12

Conclusions
Extending Impacts through Training 13

Appendix A: Bean Cowpea CRSP Degree Training Roster (1997-2001)

Appendix B: Bean Cowpea CRSP Non-Degree Training Activities (1997-2001)

Developing the Human Factor

Introduction

The Bean/Cowpea Collaborative Research Support Program (CRSP) is an initiative of the U.S. Agency for International Development (USAID) through U.S. universities collaborating with universities and institutions in developing countries of Africa and Latin America and the Caribbean. Its mission is to conduct research and training to improve the production, commercialization and utilization of beans and cowpeas in areas of the world where these legumes are important components of peoples' diets. Through this program, U.S. and Host country (HC) scientists form partnerships to address specific constraints for the achievement of these goals.

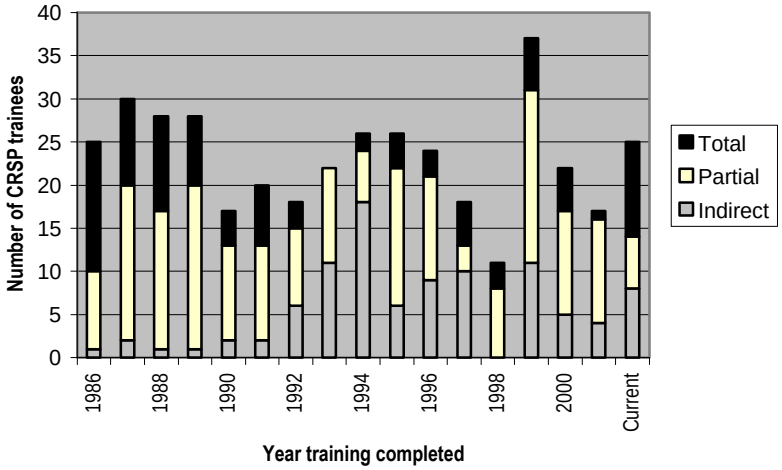
Developing a cadre of well-trained "problem solvers" is necessary if the constraints to bean and cowpea production and utilization are to be solved. Training, is therefore an essential component of the Bean/Cowpea CRSP. Through its degree and non-degree training support, the CRSP has provided career-preparation opportunities for not only HC and U.S. students but also for students from non-participating developing countries who are able to make unique contributions to CRSP goals. Bean/Cowpea CRSP-supported degree and non-degree training programs have increased the number and efficiency of bean and cowpea workers around the world. Training programs foster collegial relationships which last a lifetime. They help establish and maintain networks of researchers which enhance communication among researchers as well as the exchange of information and technologies.

Some of the HC institutions began their collaboration with the CRSP in a position weakened by limited professional staff in critical disciplines in agricultural science. The priority, in those cases, was to identify students for degree programs and initiate their studies. Other HCs identified professionals already in the system who needed non-degree training to upgrade their skills in new techniques and methodologies that have been developed since the completion of their academic programs. These were addressed through non-degree training efforts such as workshops and short courses organized by the CRSP and other organizations. Thus, both degree- and non-degree training have formed an important component of the Bean/Cowpea CRSP's mandate and are the focus of this report.

The degree training programs of the Bean/Cowpea CRSP have played an important role in accomplishing USAID's mandate of human resource development and institutional capacity building. Since its inception, the Bean/Cowpea CRSP has continued to invest its resources on training and capacity building to advance its goals of increasing bean and cowpea production and utilization around the world. The CRSP has fully, partially or indirectly supported 410 degrees over the last 16 years of the current grant period (1986-2002) (Figure 1). The

In many developing countries, human resource development is hampered by shortages of people, facilities, and funds to train adequate numbers of researchers to plan and conduct the essential production, utilization and marketing components of an effective agricultural sector. The Bean Cowpea CRSP has made human resource development a principal and integral part of its overall technology development and transfer efforts.

Figure 1. Number of CRSP trainees by type of support over the grant period 1986-2001



number of degrees completed each year through the support of the CRSP has fluctuated over the years as a result of the funding situation. However, during the current grant period an average of 24 degrees have been earned per year through total, partial or indirect support of the Bean/Cowpea CRSP.

Table 1 provides an overview of the quantitative and qualitative aspects of the degree-training program during the current grant period (1986-2002) of the Bean/Cowpea CRSP. To date, of the total 410 degrees supported fully (99), partially (213) or indirectly (98) by this CRSP, 130 have been for Bachelors degrees, 155 for Masters degrees and 125 for Ph.D. degrees. These degrees were awarded to 183 females and 227 males. Most of these students were from CRSP HCs (272), but some were from the U.S. (60) and non-HCs (mostly developing countries) (78). Major disciplines represented by the CRSP degree training programs include plant and natural sciences, food science and nutrition, and social sciences/extension (Table 1).

The Bean/Cowpea CRSP supports training students in their home or neighboring countries to achieve economies. During the current grant period almost 40% of the degree training occurred in HC institutions and 60% at U.S. universities. The researchers who have been trained by the Bean/Cowpea CRSP form the foundation for bean and cowpea research worldwide. These CRSP-trained professionals have and will continue to play a significant role in increasing the production and utilization of many crops, but especially beans and cowpeas.

The Bean Cowpea CRSP is involved in science education through the research process. All research at collaborating universities has a training component by involving graduate and undergraduate students on research projects. The professional contacts and scientific understanding that students acquire through such an experience is a vital link between research and action. Without CRSP support, this experience would not be possible for many students from the U.S. as well as HCs.

Over the years, the CRSP has published several training reports providing a summary of the training data. The last comprehensive report published by the Bean/Cowpea CRSP covered the period October 1, 1980 to April

Table 1. Overview of CRSP Degree Training Over the Grant Period 1986 to 2002

Number of degrees supported:	
Male:	227
Female:	183
Total:	410
Number of students earning one or more degrees with CRSP support:	
One degree:	347
Two degrees:	30
Three degrees:	1
Numbers trained for:	
Bachelors or equivalent degree	130
Masters degree	155
Ph.D. degree	125
Numbers trained from:	
CRSP HCs	272
U.S.	60
Non-HCs	78
Region of origin of CRSP trainees:	
West Africa	119
East/Central/Southern Africa	51
Latin America and the Caribbean	143
U.S.	60
Asia	31
All other countries	6
Numbers trained in:	
Plant and natural sciences	217
Food science and nutrition	165
Social sciences/extension	28
Degrees obtained from:	
U.S. institutions:	243
HC institutions:	167
Numbers trained with the following level of CRSP Support:	
Total	99
Partial	213
Indirect	98

Since the inception of the current grant in 1986, the Bean Cowpea CRSP has supported 378 trainees for 410 degrees in a broad array of disciplines. CRSP's degree training programs are directed toward building and strengthening the research, management and technical skills of collaborating-country personnel.

27, 1997. The objective of this report is to present a summary and analysis of the data of the degree training programs supported by the Bean/Cowpea CRSP during the last five-year extension period (April 28, 1997-April 27, 2002) of the current grant. The students included in this database are "trainees" that are supported by the CRSP totally (i.e., commitment from the CRSP for the entire duration of a degree program), partially (i.e., for one or more semesters to complete field thesis research or partial support throughout the degree program) or indirectly (i.e., through leveraged funding from other sources).

All CRSP degree training is integrated with research and done in the context of CRSP project research objectives. The degree training is done under the supervision of CRSP principal investigators and forms an integral part of the annual workplans of each regional project. Similarly, all the non-degree training is integrated with research activities and is incorporated as part of the annual workplans of each regional project.

"CRSP training provided me with knowledge and skills relevant for my job. I teach undergraduate students in areas of agricultural administration and management, agricultural extension and sociology. A lot of the skills I am using came from my training - of which the CRSP was totally involved."

-Kibiby Mtenga (Tanzania), Assistant Lecturer, Sokoine University of Agriculture, Tanzania

Degree Training During the Five-Year Grant Extension Phase (1997 to 2002)

Global Overview

Number and level of degrees earned by region of origin

To date, the CRSP has supported 131 degrees (25 students are currently in training) in the current five-year grant extension (1997-2002). These degrees were earned by 125 students. Of these, 119 students earned one degree and six students earned two degrees with CRSP support. The level of degree training by region of origin is given in Table 2. As can be seen, the Bean/Cowpea CRSP continues to emphasize training students from the developing world. The students who earned degrees during the last five years came from 28 different countries—24 of which were from developing countries in Africa, Latin America and Asia. A majority of the trainees (65%) were from the eight Bean/Cowpea CRSP host countries (Figure 1). A significant percentage of trainees were from the U.S. (14%) and 16 other developing countries (18%).

Of the 131 degrees earned, 16 were Licenses/Diplomas (all from the Latin America and the Caribbean region), 34 were Bachelors, 41 were Masters and 40 were Ph.D.s (Table 2). Thus, more than 62% of the degrees supported in the last five years were at the post-graduate level (Masters or Ph.D.) indicating the continued commitment of this CRSP in building human resources and capacity to conduct bean, cowpea or other commodity research in developing countries.

The Bean/Cowpea CRSP continues to emphasize training students from the developing world. The students earning 131 degrees in the last five years come from 28 different countries—24 of which were from developing countries in Africa, Latin America and Asia.

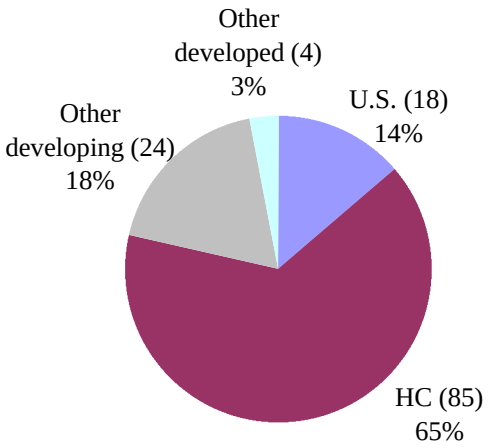
Training by gender and discipline

Academic programs supported by the Bean/Cowpea CRSP have largely been in the disciplines of plant/natural sciences, food science/nutrition, and social sciences/extension. As in the past, the majority of degrees earned in the last grant extension period were in the area of plant/natural sciences (47%), followed by food sciences/nutrition (43%) and social sciences/extension (11%) (Table 3).

Table 2. Training by Degree Level and Region of Origin, 1997-2002

Region of origin	Level of degree training				Total
	Lic.	B.S.	M.S.	Ph.D.	
West Africa	0	21	10	9	40
East/Central/Southern Africa	0	0	7	5	12
Latin America and Caribbean	16	13	12	12	53
U.S.	0	0	10	8	18
Asia	0	0	2	4	6
All others	0	0	0	2	2
Total	16	34	41	40	131

Figure 2. Percentage of CRSP trainees from the U.S., host countries, other developing countries, and other developed countries (1997-2002) (Total 131)



Women play an important role in research programs around the world. The Bean Cowpea CRSP continues to give high priority to training women in diverse disciplines. Many women graduates are important collaborators in CRSP projects.

More degrees were earned by men than women in the plant science and social science disciplines (Table 3). However, overall there is a balance between females and males receiving degrees (47% females and 53% males). In the "Ten-year Student Training Report 1981-1990" published by the CRSP, the gender distribution was 41% females and 59% males. Thus, the ratio has steadily improved during the last 20 years. This reflects the high priority given by the Bean/Cowpea CRSP to training women.

Training location

Twenty two different institutions—thirteen in the U.S. and nine in the developing world have participated in Bean/Cowpea CRSP training during the five-year extension period (Table 4). All of the License and Bachelor-level degrees have been awarded from universities in Latin America or Africa and most of the advanced degrees were awarded from U.S. universities. With a few exceptions, the degree training in the past five years has been conducted at one of the CRSP participating institutions either in the U.S. or in a host country. In CRSP HCs where the projects are working with the university system, many institutions have been able to strengthen their programs through the CRSP and now offer more undergraduate and graduate degrees. Notable among these are the University of Costa Rica and the University of Ghana-Legon.

"The CRSP has given me exceptional opportunity to engage in various types of fieldwork in socioeconomic impact assessment. As with many disciplines, there is no substitute for academic training combined with field experience."

-David Mather (USA), current CRSP trainee for Ph.D. degree, Michigan State University

Table 3. Degree Training by Gender and Discipline, 1997-2002

Discipline	Females trained	Males trained	Total
Plant/Natural sciences	21	40	61
Food science/Nutrition	36	20	56
Social sciences/Extension	5	9	14
Total:	62 (47%)	69 (53%)	131 (100%)

Table 4. U.S. and Developing Country Institutions Providing CRSP-Supported Degree Training During 1997-2002

Training Institutions	Number of trainees by degree level				Total degrees supported by the CRSP
	Lic.	B.S.	M.S.	Ph.D.	
U.S.					
Auburn University	0	0	0	1	1
Clemson University	0	0	1	1	2
Cornell University	0	0	0	1	1
Michigan State University	0	0	12	10	22
Purdue University	0	0	6	2	8
U of Arizona	0	0	0	1	1
U of California-Davis	0	0	0	3	3
U of California-Riverside	0	0	0	1	1
U of Georgia	0	0	0	4	4
U of Minnesota	0	0	1	5	6
U of Nebraska	0	0	2	5	7
U of Puerto Rico	0	0	5	0	5
U of Wisconsin	0	0	0	2	2
Total	0	0	27	36	63
Developing countries					
Bunda College, Malawi	0	0	4	0	4
CINVESTAV	0	0	0	1	1
Collegio Postgraduado, Mexico	0	0	1	0	1
EAP, Honduras	0	12	0	0	12
FAUCE, Quito, Ecuador	0	1	0	0	1
SUA, Tanzania	0	0	2	0	2
Tanta University, Egypt	0	0	0	1	1
U of Costa Rica	16	0	1	0	17
U of Ghana—Legon	0	21	7	1	29
Total	16	34	15	3	68

CRSP Degree Training by Regional Projects

Resources allocated to degree training

In the last five years, the Bean/Cowpea CRSP has operated on a regional project mode, which was a transition from the bilateral project model followed in the previous years. Under the regional model, the research and training activities are planned and implemented through three regional projects consisting of West Africa -cowpeas (WA), East Africa –beans (EA) and Latin America/Caribbean –beans (LAC).

In the last five-year grant extension period (1997-2002), the allocation of research and training funds to each regional project was: EA--$1.9 million, WA--$4.0 million, LAC--$4.4 million (Table 5). The LAC regional project is by far the largest in terms of total budget allocation, followed by the WA project. In the aggregate, the three regional projects have spent 17% of their total allocation on degree training, with the West Africa project spending the highest (19% of their five-year regional budgets or $ 151,000/year) and the East Africa project spending the lowest (12% of their five-year regional budgets or $44,000 per year) on degree training over the last five years.

"The CRSP support afforded me the opportunity to come to the United States for graduate studies."

-Mumuni Abudulai (Cameroon), Current CRSP trainee for Ph.D. degree, Clemson University

Number of degrees supported by years

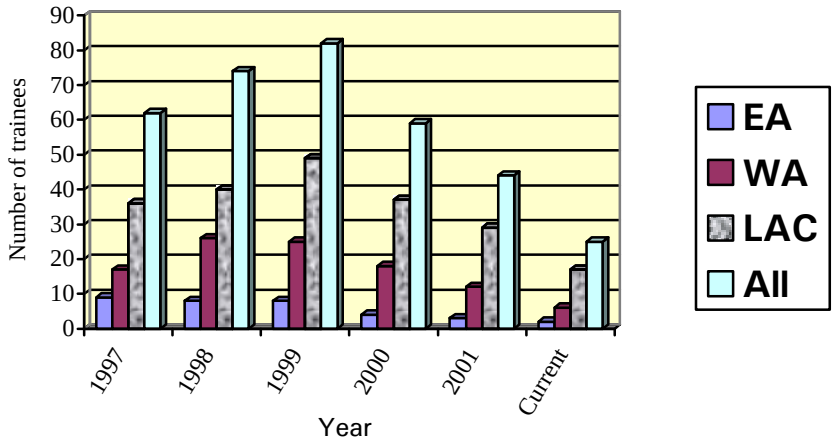
From 1997 to date, CRSP has supported an average of 58 degrees per year through full, partial or indirect support. In other words, an average of 58 degree trainees have been in the CRSP training system each year from 1997 to present. Figure 3 shows the number of degree trainees in the CRSP system by regional projects for the years 1997 to present. The trend in the number of trainees in the system is congruent with the funding cycle of the CRSP five-year extension. Thus, the number of trainees increased from 62 in 1997

Table 5. Degree Training Budgets by Regional Projects as a Percentage of Total Allocation, 1997-2002

Regional project	Total Allocation (1997-2002) (U.S.$ millions)	Training Budget (1997-2002)	
		Total (U.S.$ millions)	As % of regional allocation
EA	1.9	0.22	12%
WA	4.0	0.75	19%
LAC	4.4	0.77	18%
All	10.3[a]	1.74	17%

[a] This total does not include the Management Office or other CRSP-wide project support costs. It only includes funds budgeted in regional projects for research and training.

Figure 3. Number of degree trainees in the CRSP system by year and regional projects (1997-current)



(the first year of the five-year extension) to a peak of 80 in 1999 (the mid-point of the five-year grant extension phase). There after, it has steadily declined each year in anticipation of the end of the current grant. Currently, there are 25 degree trainees in the CRSP training system.

The number of trainees in the training system by regional projects has also followed this general trend of increased numbers in the initial years (1997-1999) and a decline in the number of trainees in the later years (2000-2001). For the level of resources devoted to training, the EA project has supported an average of 6 trainees per year, the WA regional project has supported 18 trainees per year and the LAC regional project has supported 34 trainees per year.

Indicators of degree training outputs

Table 6 presents some indicators of degree training outputs in comparison with the level of resources in each regional project. None of the regional projects appear to be congruent in the level of resources committed to degree training and the level of degree training outputs (e.g., number and level of degree training). The discrepancy between the percentage of resources allocated to training by a regional project and different indicators of training outputs is larger in the WA and LAC regional projects. In WA, the discrepancy between resources allocated (43%) and the number of degrees completed or ongoing (32%) may be a reflection of the region's higher level of fully and partially supported students (95%), which is more expensive in terms of financial commitment.

The LAC regional project has had the largest proportion of resources allocated to degree training (44%) and correspondingly has trained the largest number of students (59% of all), and supported 59% of all

From 1997 to date, the CRSP has supported an average of 58 degrees per year—6 through the EA project, 18 through the WA regional project, and 34 through the LAC regional project.

Table 6. Indicators of Training Resources and Outputs by Regional Projects, 1997-2002

Indicators (1997-2002)	Regional Projects			All
	EA	WA	LAC	
Total training resources (million $U.S.) spent on a regional project (percentage of all):	0.22(13%)	0.75(43%)	0.77(44%)	1.74 (100%)
Total number of degrees completed or ongoing in a regional project (percentage of all):	12 (9%)	42 (32%)	77 (59%)	131 (100%)
Level of degree training				
Ph.D.	6 (50%)	11 (26%)	22 (29%)	40 (30%)
M.S.	6 (50%)	10 (24%)	26 (33%)	41 (32%)
B.S.	0	21 (50%)	13 (17%)	34 (26%)
Lic	0	0	16 (21%)	16 (12%)
.				
All:	(100%)0	(100%)	(100%)	(100%)
Post-graduate degree training supported by a regional project as a percentage of all	15%	26%	59%	100% (81)
Number of degrees with different levels of support from a regional project:				
Full support:	10 (83%)	8 (19%)	13 (17%)	31 (24%)
Partial support:	1 (8%)	32 (76%)	28 (36%)	61 (46%)
Indirect	1 (8%)	2 (5%)	36 (47%)	39 (30%)
Total:	(100%)	(100%)	(100%)	(100%)
"Fully" supported degrees by a regional project as a percentage of all	32%	27%	41%	100% (31)
Origin of students from:				
CRSP HCs:	9 (75%)	38 (90%)	38 (49%)	85 (65%)
Non-HCs:	1 (8%)	3 (7%)	24 (31%)	28 (22%)
U.S.:	2 (17%)	1 (2%)	15 (20%)	18 (14%)
All:	(100%)	(100%)	(100%)	(100%)
Non-U.S. students trained by a regional project as a percentage of all	9%	37%	54%	100% (113)
Location of training:				
U.S. Institutions:	6 (50%)	12 (29%)	45 (58%)	63 (48%)
HC Institutions:	6 (50%)	30 (71%)	32 (42%)	68 (52%)
All:	(100%)	(100%)	(100%)	(100%)

"A prerequisite for my present position was experience and knowledge of tropical crop production practices, which I gained by working under the CRSP project."

-Daniela O'Keefe (USA), Research Specialist, University of the Virgin Islands

post-graduate degree training (Table 6). However, unlike the other two regions, the LAC regional project provides many students (47% of regional total) indirect CRSP support (through leveraged funds from other sources) to complete their degree training. Leveraging increases the efficiency of the utilization of CRSP funds as well as training outputs.

In the EA regional project, the major emphasis in degree training has been at the Ph.D. level (50% of regional total). This emphasis reflects the need for well-trained decision-makers and technical leadership in the region. It should be noted that most of the CRSP-supported Ph.D.s return to the region, bringing with them knowledge of what is needed and work toward improvement in the research infrastructure, the achievement of CRSP goals for institution building, and improving research capacity in HCs.

In terms of the origin of CRSP trainees, the LAC regional project is most diverse, with more than 50% of trainees originating from non-HCs and the U.S. In the EA and WA regional projects, a majority of the students trained come from CRSP HCs (75% and 90%, respectively).

Discipline and gender analysis

A review of the training data across regional projects by discipline and gender is presented in Table 7. The summary shows that the CRSP record continues to be strong in the training of women scientists in some regions and disciplines, however, less so in others. Male domination is clear in the plant/natural sciences across all regional projects. Overall, 40 males and 21 females were trained in this discipline. In the case of the food and social sciences, the gender imbalance is not as severe in the EA and WA regional projects. In the LAC regional project, females dominate the food science and nutrition fields of degree training by a ratio of almost 10 to 1 (21 females and 2 males).

Table 7. Degree Training Profile of Regional Projects by Discipline and Gender, 1997-2002

	EA project		WA project		LAC project		All	
Discipline	Female	Male	Female	Male	Female	Male	Female	Male
Plant/Natural Sciences	2	3	1	7	18	30	21	40
Food Science/Nutrition	1	1	14	18	21	1	36	20
Social Sciences/Extension	2	3	1	1	2	5	5	9
Total	5	7	16	26	41	36	62	69
	12		42		77		131	

In terms of the disciplinary focus of degree training within a regional project, the picture is quite different across regions. In EA, the numbers trained in plant/natural sciences are the same as in the discipline of social sciences/extension (five degrees each). However, training in food sciences/nutrition has lagged in this region with only one student currently pursuing a Ph.D. degree in the U.S. This is mainly a reflection of the lack of CRSP funding for collaborative research/training in food science/nutrition within the EA region.

On the other hand, the WA Regional Project has shown a major commitment to training in food science/nutrition. A total of 32 degrees were supported in the area of food science/nutrition (all from Ghana) compared with only 8 in plant/natural sciences and 2 in social sciences. The strong training output of the WA regional project in the area of food science/nutrition reflects the strong training capacity of the Ghanaian partner institution, the University of Ghana-Legon.

Non-Degree Training During the Five-Year Grant Extension Phase (1997 to 2002)

Global Overview

Non-degree and short-term training are considered important for attaining the CRSP goals. This includes training through organized workshops, group training, and short-term individualized training at CRSP participating institutions, including post-doctoral fellowships. Non-degree training is an important tool for the CRSPs in achieving the goal of human resource development through support of opportunities for continuing education. This is especially important for technology development and sustainable agricultural programs in the U.S. and HCs.

Annex B provides an overview of all the non-degree short-term training supported by the Bean-Cowpea CRSP during FY 1997 to FY 2001. Over the last five years, this CRSP has supported 47 short-term training activities in Africa, Latin America and the U.S. These activities range from one or a few days training programs (e.g., training the trainers, farmer field schools, training in social science techniques, food processing techniques) to a few months of individualized training in a classroom, laboratory or field setting. Workshops have also been an important mechanism for providing opportunities to CRSP scientists and other participants for continuing education, networking and building linkages within the scientific community. Almost 2,000 bean and cowpea research scientists, farmers, extension staff, technicians, social scientists, food scientists and nutritionists have benefited from these short-term training opportunities over the last five years (Table 8).

Table 8: Number of Beneficiaries of Short-Term and Non-Degree Training Programs, FY1997-FY2001

Year	Number of beneficiaries by type of short-term training			Total beneficiaries
	Group training	Individualized training	Workshops	
1997	60	15	40	115
1998	183	1	10	194
1999	300	8	152	460
2000	871	5	90	966
2001	146	2	110	258
Total	1560	31	402	1993

"I am one of the senior molecular biologists on campus who has contributed tremendously to post-graduate training in molecular biology and biotechnology. To-date, I have trained 10 M.S. students who are either in the biotech industry at home or abroad, as well as pursuing doctoral degrees or post doctoral training."

-Dr. Idah Sithole-Niang (Zimbabwe), former CRSP trainee at University of Wisconsin,
Currently a Senior Lecturer at the University of Zimbabwe

Conclusions

Extending Impact Through Training

The report of degree and non-degree training shows the commitment of the Bean/Cowpea CRSP to the goal of human resource development and institutional capacity building in developing countries. In the last five-year grant extension phase, as in the previous years, the Bean/Cowpea CRSP has continued this commitment by allocating a significant level of resources to training programs across all three regional projects—East Africa, West Africa, and Latin America/Caribbean. Overall, the CRSP has allocated an average of U.S.$ 350,000 per year on degree training during the last five years.

The training output from these resources has been strong as well. In the last five years, the CRSP has supported a total of 131 degrees – 30% each for Ph.D. and Masters and 40% for Bachelors (including License) level degree training. More than two-thirds of the 131 degrees have been supported fully or partially from CRSP resources and almost 50% of the training has occurred at U.S. institutions. Eighty-seven percent of all degree training has benefited non-U.S. students (either from HCs or other developing countries).

With regards to the overall gender record, training for the CRSP as a whole has slightly favored males (53%), although in recent years it has been much more equitable than in the past. The majority of degree training in the last five years has occurred in the fields of plant and natural sciences (54% of all degrees), followed by food science/nutrition (34% of all degrees) and social sciences (12% of all degrees).

A review of the training data by regional projects sheds even more light on the internal dynamics of each region. The East Africa regional project, with only 13% of total training resources, has trained 33% of all fully-supported degrees and 15% of all post-graduate level degree training. The various indicators of training output show that the degree training in East Africa is most congruent with their resources.

There is a discrepancy between training resources allocated and resulting training outputs in the WA and LAC projects. The West Africa regional project with a 43% share of total training resources, has trained 32% of all fully- and partially-supported degrees and 26% of post-graduate degrees. The LAC regional project, the largest in the CRSP, had 44% of the total training resources and has supported 59% of all fully- and partially-supported degrees and 59% of post-graduate degrees.

Because of the design of the training programs in the CRSP, students from diverse backgrounds interact with one another in the labs and courses supervised by CRSP scientists. As such, a number of benefits accrue to cross-cultural learning, the understanding of different cultures and ecologies, and the establishment of international relationships that will last for many years. Through this interaction of diverse backgrounds and interests and the maintenance of the

relationship with CRSP senior scientists, CRSP graduates continue to receive professional support, stay in touch with changes in their fields and have access to opportunities that emerge internationally.

Of the 125 students that are or have been supported by the CRSP to earn the 131 degrees, 25 are current CRSP trainees and 100 have already completed their degree training in the last five years. The professional status of 74 of the latter are known (See Appendix A). Forty-seven of these graduates are involved in teaching/research/extension/management, 15 have joined the private- or NGO-sectors, eight are pursuing graduate degrees on their own, and four are directly involved in CRSP projects. Of the 48 HC trainees who have completed their degrees and whose professional status is known, 38 are pursuing professional careers or further studies in their own countries, six are working or studying in the U.S., and four are studying or working in a third country.

CRSP support for degree and short-term training has direct impacts on the trainee by advancing her/his personal professional career as well as indirect impacts on the capacity building of the institution they join after completing the training. The testimonies from the beneficiaries of CRSP's degree and short-term training featured in this report allude to these benefits. The data and testimonials presented in this report indicate that the CRSP trainees continue to make a professional contribution either in their home country or elsewhere from their CRSP training and experience. Over the years, the program has generated increasing numbers of well-trained young professionals who are assuming major positions of responsibility and influence in their countries. They are contributing toward the development of sustainable systems of production and utilization of not only beans and cowpeas but other food crops as well.

"CRSP training has enriched my professional life with international collaboration and provided contacts that will help me to integrate my research goals with my view of International Agriculture."

-Consuelo Estevez de Jensen (Ecuador), Research Associate, University of Minnesota

Appendix A

Bean Cowpea CRSP Degree Training Roster (1997-2001)

(See Appendix A.xls)

Training Report: Appendix A

Bean/Cowpea CRSP Degree Training Roster by Regional Project and Year Degree Completed/Ongoing, 1997-2001

COUNT	REGIONAL PROJECT	END YEAR	START YEAR	GIVEN NAME(S)	LAST NAME	CITIZENSHIP	GENDER	CRSP SUPPORT \1	TRAINING LOCATION \2	DEGREE	DISCIPLINE	LAST KNOWN PROFESSIONAL ACTIVITY/ EMPLOYER
1	ESA	Ongoing	2000	T.C.	Mosha	Tanzania	M	T	MSU	Ph.D.	Food Scienc and human nutrition	Current trainee
2	ESA	Ongoing	2000	Christopher	Mzembe	Malawi	M	T	Bunda	Masters	Rural development and extension	Current trainee
3	ESA	2000	1997	Lilian	Chiumia	Malawi	F	T	Bunda	Masters	Plant Pathology/Biotechn	Staff, Department of Environmental Affairs, Nchisi, Malawi
4	ESA	2000	1998	Regina	Gemignani	U.S.	F	P	U of AZ	Ph.D.	Agricultural Anthropology	Writing her dissertation
5	ESA	1999	1997	Luseshelo	Silomba	Tanzania	M	T	SUA	Masters	Agricultural Economics	Researcher, Cashewnut Program, Ministry of Ag. and Food
6	ESA	1999	1992	Patrick	Kambewa	Malawi	M	T	MSU	Ph.D.	Ag Economics	Staff, Chancellor College, Zomba, Malawi
7	ESA	1999	1997	Kibiby	Mtenga	Tanzania	F	T	SUA	Masters	Agriculture Extension	Assistant Lecturer, Dept. of Agriculture Education and
8	ESA	1999	1997	Seliano M.	Chipokosa	Malawi	M	T	Bunda	Masters	Entomology	Staff, Forest Department, Salima, Malawi
9	ESA	1999	1992	Maria	Rojas	Costa Rica	F	I	UCD	Ph.D.	Plant Biology	Post-Doctoral Fellow, UC-Davis (Dept of Plant Pathology)
10	ESA	1999	1997	Agnes	Mbachi Mwangwela	Malawi	F	T	Bunda	Masters	Food Science	Staff, Bunda College of Agriculture, Lilongwe, Malawi
11	ESA	1997	1992	William	Johnson	U.S.	M	T	UCD	Ph.D.	Agronomy and Range Science	Research Geneticist, Cornell University
12	ESA	1997	1991	Pablo	Guzman	Colombia	M	T	UCD	Ph.D.	Plant Pathology	Staff member, Parsons Seed Certification Center, UC-Davis
13	WA	Ongoing	1999	Abudulai	Mumuni	Ghana	M	T	Clemson Univ.	Ph.D.	Entomology	Current trainee
14	WA	Ongoing	1998	Augustino	Langyintuo	Ghana	M	T	Purdue	Ph.D.	Agricultural Economics	Current trainee
15	WA	Ongoing	1998	Gloria	Tetteh	Ghana	F	P	UGA	Ph.D.	Nutrition/Food Science	Current trainee
16	WA	Ongoing	2000	Nicole Sharon	Komey	Ghana	F	T	UGA	Ph.D.	Food Science	Current trainee

Bean/Cowpea CRSP Degree Training Roster by Regional Project and Year Degree Completed/Ongoing, 1997-2001

COUNT	REGIONAL PROJECT	END YEAR	START YEAR	GIVEN NAME(S)	LAST NAME	CITIZENSHIP	GENDER	CRSP SUPPORT \1	TRAINING LOCATION \2	DEGREE	DISCIPLINE	LAST KNOWN PROFESSIONAL ACTIVITY/ EMPLOYER
17	WA	Ongoing	1999	Ousmane	Boukar	Cameroon	M	T	Purdue	Ph.D.	Agronomy	Current trainee
18	WA	Ongoing	1998	Samba	Thiaw	Senegal	M	T	UCR	Ph.D.	Plant Physiology/Genetic	Current trainee
19	WA	2001	2000	Annor	Amponsah	Ghana	M	P	U of Ghana	B.S.	Food Science	Not known
20	WA	2001	2000	Enyoman	Quist	Ghana	F	P	U of Ghana	B.S.	Food Science	Not known
21	WA	2001	2000	Gloria	Amoah Osei	Ghana	F	P	U of Ghana	B.S.	Food Science	Not known
22	WA	2001	2000	Obed	Aduama	Ghana	M	P	U of Ghana	B.S.	Food Science	Not known
23	WA	2001	1997	Saalia	Firibu	Ghana	F	P	UGA	Ph.D.	Food Science	Post Doctoral Fellow,Food Science, UGA
24	WA	2001	2000	Samuel	Asare	Ghana	M	P	U of Ghana	B.S.	Food Science	Not known
25	WA	2000	1999	Collins	Amankwaah	Ghana	M	P	U of Ghana	B.S.	Food Science	Not known
26	WA	2000	1997	Gloria E.	Otoo	Ghana	F	P	U of Ghana	B.S.	Food Science	Field Officer, WHO Multi-Center Growth Reference Study, Legon
27	WA	2000	1999	Jacob	Tetteh-Ayin	Ghana	M	P	U of Ghana	B.S.	Food Science	Not known
28	WA	2000	1999	Justina	Laing	Ghana	F	P	U of Ghana	B.S.	Food Science	Not known
29	WA	2000	1999	Kwame	Andoh-Kumi	Ghana	M	P	U of Ghana	B.S.	Food Science	M.Phil student at U of Ghana
30	WA	2000	1998	Mbene	Faye	Senegal	F	T	Purdue	Ph.D.	Agricultural Economics	Economist, ISRA/CNRA, Bambey, Senegal
31	WA	1999	1994	Alex	Egyir-Yawson	Ghana	M	P	U of Ghana	Masters	Zoology	Scientific Officer, Ghana Atomic Energy Commission
32	WA	1999	1998	Beatrice	Cornelius	Ghana	F	P	U of Ghana	Masters	Food Science	Ph.D. student at U of Georgia
33	WA	1999	1998	Eric	Sintim-Aboagye	Ghana	M	P	U of Ghana	B.S.	Nutrition	Not known

Bean/Cowpea CRSP Degree Training Roster by Regional Project and Year Degree Completed/Ongoing, 1997-2001

COUNT	REGIONAL PROJECT	END YEAR	START YEAR	GIVEN NAME(S)	LAST NAME	CITIZENSHIP	GENDER	CRSP SUPPORT \1	TRAINING LOCATION \2	DEGREE	DISCIPLINE	LAST KNOWN PROFESSIONAL ACTIVITY/ EMPLOYER
34	WA	1999	1998	Fred	Apeaning	Ghana	M	P	U of Ghana	B.S.	Food Science	Not known
35	WA	1999	1998	Godlove E.T.	Addo	Ghana	M	P	U of Ghana	B.S.	Food Science	Not known
36	WA	1999	1998	Maxwell	Aferi	Ghana	M	P	U of Ghana	B.S.	Food Science	Field Officer, WHO Multi-Center Growth Reference Study, Legon
37	WA	1999	1997	Nicole Sharon	Komey	Ghana	F	P	U of Ghana	Masters	Food Science	Current Ph.D. student at UGA, USA
38	WA	1999	1998	Prince Kwame	Asante	Ghana	M	P	U of Ghana	B.S.	Food Science	Not known
39	WA	1999	1998	Saeed K.	Abdallah	Ghana	M	P	U of Ghana	B.S.	Nutrition	Not known
40	WA	1999	1998	Samuel	Gbogbo	Ghana	M	P	U of Ghana	B.S.	Food Science	Nutrition Officer, Nutrition Division, Ministry of Health
41	WA	1999	1996	Samuel	Sosi	Ghana	M	P	U of Ghana	Masters	Food Science	Not known
42	WA	1999	1998	Theodosia	Adom	Ghana	F	P	U of Ghana	Masters	Nutrition	Not known
43	WA	1999	1996	Yvonne	Kluvitse	Ghana	F	P	UGA	Ph.D.	Food Science	Post Doctoral Fellow,Food Science, UGA
44	WA	1998	1996	Abudulai	Mumuni	Ghana	M	T	Clemson Univ.	Masters	Entomology	Current Ph.D. student at Clemson University, USA
45	WA	1998	1997	Adufu	Humphrey	Ghana	M	P	U of Ghana	B.S.	Food Science	Not known
46	WA	1998	1997	Emmanuel	Kofi Ackom	Ghana	M	P	U of Ghana	B.S.	Food Science	Senior Research Officer, U of Ghana
47	WA	1998	1997	Gloria	Tetteh	Ghana	F	P	U of Ghana	Masters	Nutrition/Food Science	Current Ph.D. student at UGA, USA
48	WA	1998	1997	K.	Frimpong	Ghana	M	P	U of Ghana	Masters	Food Science	Manager, Cocoa Processing Company, Ghana
49	WA	1998	1997	Kokroko	Paul Junior	Ghana	M	P	U of Ghana	B.S.	Food Science	Not known
50	WA	1998	1996	Ousmane	Boukar	Cameroon	M	T	Purdue	Masters	Agronomy	Current Ph.D. student at Purdue University

Bean/Cowpea CRSP Degree Training Roster by Regional Project and Year Degree Completed/Ongoing, 1997-2001

COUNT	REGIONAL PROJECT	END YEAR	START YEAR	GIVEN NAME(S)	LAST NAME	CITIZENSHIP	GENDER	CRSP SUPPORT \1	TRAINING LOCATION \2	DEGREE	DISCIPLINE	LAST KNOWN PROFESSIONAL ACTIVITY/ EMPLOYER
51	WA	1997	1996	Alvira	Dickson	Ghana	F	P	U of Ghana	B.S.	Food Science	Not known
52	WA	1997	1994	Aziza Soliman	Elkholy	Egypt	F	I	UCR/Tanta U, Egypt	Ph.D.	Faculty of Science	Instructor, University of Tanta, Egypt
53	WA	1997	1992	Don	Sudbrink	U.S.	M	P	Auburn Univ.	Ph.D.	Entomology	Postdoctural Associate, Mississippi State University Delta Research
54	WA	1997	1994	Florence	Hymore	Ghana	F	I	U of Ghana	Ph.D.	Nutrition/Food Science	Not known
55	LAC	Ongoing	2001	Angel	Murillo	Ecuador	M	P	UPR	Masters	Agronomy	Current trainee
56	LAC	Ongoing	1998	Carlos German	Munoz	Colombia	M	I	UPR	Masters	Plant breeding and genetics	Current trainee
57	LAC	Ongoing	2000	Daniel	Sosa	Honduras	M	I	EAP	B.S.	Agronomy	Current trainee
58	LAC	Ongoing	2001	Eliza	Erazo	Honduras	F	P	EAP	B.S.	Agronomy	Current trainee
59	LAC	Ongoing	2000	Gabriela	Diaz	Chile	F	I	EAP	B.S.	Agronomy	Current trainee
60	LAC	Ongoing	2000	Giselle	Maurer	U.S.	F	T	Purdue	Masters	Food Science	Current trainee
61	LAC	Ongoing	2001	Gonzalo	Montano	Bolivia	M	I	EAP	B.S.	Agronomy	Current trainee
62	LAC	Ongoing	1998	Horacio	Gonzalez	Mexico	M	I	MSU	Ph.D.	Agricultural Economics	Current trainee
63	LAC	Ongoing	2001	Jenni	Swenson	U.S.	F	P	UMN	Ph.D.	Scientific and technical	Current trainee
64	LAC	Ongoing	1998	Jorge	Gonzalez	Bolivia	M	T	UNL	Ph.D.	Plant Breeding and Genetics	Current trainee
65	LAC	Ongoing	2000	Juan Manuel	Osorno	Colombia	M	T	UPR	Masters	Plan breeding and genetics	Current trainee
66	LAC	Ongoing	2001	Kevin	Soto	Ecuador	M	P	EAP	B.S.	Agronomy	Current trainee

Bean/Cowpea CRSP Degree Training Roster by Regional Project and Year Degree Completed/Ongoing, 1997-2001

COUNT	REGIONAL PROJECT	END YEAR	START YEAR	GIVEN NAME(S)	LAST NAME	CITIZENSHIP	GENDER	CRSP SUPPORT \1	TRAINING LOCATION \2	DEGREE	DISCIPLINE	LAST KNOWN PROFESSIONAL ACTIVITY/ EMPLOYER
67	LAC	Ongoing	1999	Mark	Frahm	U.S.	M	T	MSU	Masters	Plant Breeding and Genetics	Current trainee
68	LAC	Ongoing	1997	Nedim	Mutlu	Turkey	M	I	UNL	Ph.D.	Horticulture	Current trainee
69	LAC	Ongoing	1999	Robyn	Engleright	U.S.	F	I	MSU	Ph.D.	Plant breeding and genetics	Current trainee
70	LAC	Ongoing	1999	Veronica	Vallejo	U.S.	F	I	MSU	Masters	Plant breeding and genetics	Current trainee
71	LAC	Ongoing	2001	Wolfgang	Pejuan	Honduras	M	P	MSU	Masters	Agricultural economics	Current trainee
72	LAC	2001	1994	Bernard	Mtonga	Zambia	M	I	MSU	Ph.D.	Crop and Soil Sciences	Working with World Vision
73	LAC	2001	1996	David	Mather	U.S.	M	P	MSU	Masters	Ag Economics	Current Ph.D. student in MSU/AEC
74	LAC	2001	1997	Gustavo	Bernal	Ecuador	M	I	UMN	Ph.D.	Soil Microbiology	Head, Plant Pathology Unit, INIAP and Prof. of Plant Biology, Univ. San Francisco, Quito, Ecuador
75	LAC	2001	1996	Horacio	Guzman	Mexico	M	I	CINVESTAV	Ph.D.	Genetics	INIFAP, Mexico
76	LAC	2001	1999	Juan	Estrada-Valle	Guatemala	M	P	MSU	Masters	Ag Economics	Current Ph.D. student in MSU/RD
77	LAC	2001	1996	Tae-Jin	Lee	Korea	M	I	UNL	Ph.D.	Horticulture	Post-doc, Michigan Tech University, USA
78	LAC	2001	1994	Daniela	O'Keefe	U.S.	F	P	UNL	Masters	Plant Pathology	Research Associate, Univ. of Virgin Islands, St. Croix, USVI
79	LAC	2001	1997	Irene	Christiansen	Denmark	F	I	UMN	Ph.D.	Soil science	Project Director, DANIDA (Danish Aid Agency) Camargo, Bolivia
80	LAC	2001	1999	Laura	Hangen	Costa Rica	F	T	MSU	Masters	Nutrition	Staff, Associate School of Nutrition, Univ. of Costa Rica
81	LAC	2001	1998	Maurice	Yabba	U.S.	M	P	MSU	Ph.D.	Plant physiology/genetic	Post Doctoral Fellow, Univ. of Virgin Islands, St. Croix
82	LAC	2001	2000	Vivian	Leal	Costa Rica	F	P	U of CR	Lic.	Food Technology	Staff, Griffin Co., Costa Rica

Bean/Cowpea CRSP Degree Training Roster by Regional Project and Year Degree Completed/Ongoing, 1997-2001

COUNT	REGIONAL PROJECT	END YEAR	START YEAR	GIVEN NAME(S)	LAST NAME	CITIZENSHIP	GENDER	CRSP SUPPORT \1	TRAINING LOCATION \2	DEGREE	DISCIPLINE	LAST KNOWN PROFESSIONAL ACTIVITY/ EMPLOYER
83	LAC	2001	2000	Yunlen	Tacsan	Costa Rica	F	P	U of CR	Lic.	Food Technology	Graduate Assistant at CITA, Univ. of Costa Rica.
84	LAC	2000	1999	Adriana	Murillo	Costa Rica	F	I	U of CR	Lic.	Nutrition	Pursuing graduate studies, UNAM, Mexico
85	LAC	2000	1996	Consuelo	Estevez de Jensen	Ecuador	F	P	UMN	Ph.D.	Plant Pathology	Post Doctoral Fellow, Plant Pathology, UMN
86	LAC	2000	1999	Dyala	Morales	Costa Rica	F	P	U of CR	Lic.	Food Technology	Teaching in an Agriculture College, Costa Rica
87	LAC	2000	1999	Erika	Amador	Costa Rica	F	P	U of CR	Lic.	Food Technology	Staff, Macadamia de Costa Rica, Costa Rica
88	LAC	2000	1997	Jose Geraldo	Solano	Costa Rica	M	P	U of CR	Lic.	Food Technology	Not known
89	LAC	2000	1997	Juan Carlos	Takegami	Colombia	M	T	UPR	Masters	Plant Breeding	Not known
90	LAC	2000	1998	Kathy	Lyons	U.S.	F	T	Purdue	Masters	Nutrition	Intern, Dietetics Program at University of Kentucky
91	LAC	2000	1997	Lisa	Davis	U.S.	F	T	Purdue	Masters	Food Chemistry	Staff of a food company, Detroit, Michigan
92	LAC	2000	1995	Maria	Ospina	Colombia	F	P	MSU	Masters	Plant Breeding/Genetics	Not known
93	LAC	2000	1997	Maria Carmela	Posa	Philippines	F	P	MSU	Masters	Genetics/Plant Breeding	Technician, Plant Research Lab, MSU
94	LAC	2000	1999	Paola	Paez	Costa Rica	F	I	U of CR	Lic.	Nutrition	Administrator, Food Service, FODESC SODEXO, Costa Rica
95	LAC	2000	1999	Shirley	Rodriguez	Costa Rica	F	I	U of CR	Lic.	Nutrition	Instructor, Escuela de Nutricion, UCR
96	LAC	2000	1999	Tatiana	Martinez	Costa Rica	F	I	U of CR	Lic.	Nutrition	Nutritionist, Merck Sharp Dome, Costa Rica
97	LAC	2000	1999	Xiomara E. Gomez	Machuca	El Salvador	F	I	EAP	B.S.	Plant Science	Not known
98	LAC	1999	1990	Ahmed	Jama	Somalia	M	T	MSU	Ph.D.	Plant Physiology	Michigan Dept. of Agriculture
99	LAC	1999	1998	Alejandra	Fernandez	Costa Rica	F	I	U of CR	Lic.	Communication	Communication Advisor, Chanel 15, UCR

Bean/Cowpea CRSP Degree Training Roster by Regional Project and Year Degree Completed/Ongoing, 1997-2001

COUNT	REGIONAL PROJECT	END YEAR	START YEAR	GIVEN NAME(S)	LAST NAME	CITIZENSHIP	GENDER	CRSP SUPPORT \1	TRAINING LOCATION \2	DEGREE	DISCIPLINE	LAST KNOWN PROFESSIONAL ACTIVITY/ EMPLOYER
100	LAC	1999	1998	Carolina	Villalobos	Costa Rica	F	I	U of CR	Lic.	Nutrition	Nutritionist, Meat Johnson, Costa Rica
101	LAC	1999	1998	Cinthya K. Martinez	Gonzalez	Ecuador	F	P	EAP	B.S.	Plant Science	Teaching Assistant, EAP/Zamorano, Honduras
102	LAC	1999	1997	Denise	Mainville	U.S.	F	P	MSU	Masters	Ag Economics	Current Ph.D. student in MSU/AEC
103	LAC	1999	1998	Elder R. Argenal	Gudiel	Honduras	M	I	EAP	B.S.	Plant Science	Extensionist, Ministry of Agriculture, Honduras
104	LAC	1999	1998	Erika	Campos	Costa Rica	F	I	U of CR	Lic.	Nutrition	Marketing, Dos Pinos, Costa Rica
105	LAC	1999	1999	Felix H. Vargas	Cardenas	Peru	M	P	EAP	B.S.	Plant Science	Not known
106	LAC	1999	1998	Florbeth	Viquez	Costa Rica	F	I	U of CR	Masters	Food Science	Director, CITA, Universidad de Costa Rica
107	LAC	1999	1998	Isabl	Sanchez	Costa Rica	F	I	U of CR	Lic.	Communication	Journalist, Costa Rica
108	LAC	1999	1997	Karina	Navarette	Costa Rica	F	P	U of CR	Lic.	Food Technology	Staff, Gerber Foods Co., Costa Rica
109	LAC	1999	1996	Kristin	Schneider	U.S.	F	I	MSU	Ph.D.	Plant Breeding and Genetics	Research Geneticist, Holden Foundation Seeds-Monsanto
110	LAC	1999	1996	Maeli	Melotto	Brazil	F	I	MSU	Ph.D.	Plant Breeding and Genetics	Research Associate, University of Sao Paulo
111	LAC	1999	1998	Maria A. Bravo	Yanez	Ecuador	F	P	EAP	B.S.	Plant Science	Research Assit., Bean Program/EAP, Honduras
112	LAC	1999	1998	Tatiana	Sancho	Costa Rica	F	I	U of CR	Lic.	Nutrition	Nutritionist, Gerber foods, Costa Rica
113	LAC	1999	1997	Tawainga Witman	Katsvairo	Zimbabwe	M	I	Cornell	Ph.D.	Crop and Soil Sciences	Post Doc Associate, Crop & Soil Sciences, Cornell University
114	LAC	1999	1998	Wolfgang B. Pejuan	Ucles	Honduras	M	P	EAP	B.S.	Plant Science	Research Assist. USAID/Zamorano Project, Honduras
115	LAC	1999	1997	Yuki	Ishikawa	Japan	M	P	MSU	Masters	Ag Economics	Consultant, International Division, Nippon-Koei Co., Japan
116	LAC	1998	1995	Aracely	Castro	Honduras	F	T	UPR	Masters	Agronomy	Staff, Bean/Cowpea CRSP project at Escuela Agricola Panamerica

Bean/Cowpea CRSP Degree Training Roster by Regional Project and Year Degree Completed/Ongoing, 1997-2001

COUNT	REGIONAL PROJECT	END YEAR	START YEAR	GIVEN NAME(S)	LAST NAME	CITIZENSHIP	GENDER	CRSP SUPPORT \1	TRAINING LOCATION \2	DEGREE	DISCIPLINE	LAST KNOWN PROFESSIONAL ACTIVITY/ EMPLOYER
117	LAC	1998	1997	Arturo	Cordoba	Costa Rica	M	P	U of CR	Lic.	Food Technology	Pursuing graduate studies, Spain
118	LAC	1998	1998	Fabiola M. Bvir	Guevara	Honduras	F	P	EAP	B.S.	Plant Science	Not known
119	LAC	1998	1993	Karen	Ballen	U.S.	F	P	UMN	Masters	Soil Science	Assistant Prof., Augsburg College, Minnesota
120	LAC	1997	1995	Gustavo	Montero	Ecuador	M	P	FAUCE, Quito	B.S.	Agronomy	Staff, Private agriculture company
121	LAC	1997	1996	Herath	Ariyarathne	Sri Lanka	M	T	UNL	Ph.D.	Plant Pathology	Research Officer, Regional Agr. Res.and Dev. Center, Sri Lanka
122	LAC	1997	1990	James	Karkashian	Costa Rica	M	I	UWI	Ph.D.	Plant Pathology	Faculty, Department of Biology, University of Costa Rica
123	LAC	1997	1993	Jorge Elisondo	Barron	Mexico	M	I	UMN	Ph.D.	Horticulture	INIFAP, Mexico
124	LAC	1997	1996	Martha	Davila	Venezuela	F	I	UNL	Ph.D.	Horticulture	Assistant Professor, Universidad de Centro Occidental, Venezuela
125	LAC	1997	1995	Maurice	Yabba	U.S.	M	T	MSU	Masters	Crop and Soil Sciences	Post Doctoral Fellow, Univ. of Virgin Islands, St. Croix
126	LAC	1997	1994	Patricia	Rodriguez	Costa Rica	F	T	Purdue	Masters	Food Science	Technician, Kraft foods, Chicago
127	LAC	1997	1994	Ricardo	Balardin	Brazil	M	I	MSU	Ph.D.	Crop and Soil Sciences	Professor University Federal de Santa Maria, Dept. Defensa
128	LAC	1997	1994	Rigoberto	Rosales-Serna	Mexico	M	I	CP, Chapingo	Masters	Genetics Center	Bean Rearcher, INIFAP, CEVAMEX
129	LAC	1997	1993	Soon Oh	Park	Korea	M	I	UNL	Ph.D.	Horticulture	Assistant Professor, Texas A&M University, USA
130	LAC	1997	1993	Steve F.	Hanson	U.S.	M	I	UWI	Ph.D.	Plant Pathology	Molecular Virology, University of Wisconsin
131	LAC	1997	1994	Tawainga Witman	Katsvairo	Zimbabwe	M	I	MSU	Masters	Crops and Soil Sciences	Post Doc Associate, Crop & Soil Sciences, Cornell University

\1 CRSP support categories: T=Total, P=Partial, I=Indirect

\2 Full names and locations of some of the abbreviated training locations are:

Bean/Cowpea CRSP Degree Training Roster by Regional Project and Year Degree Completed/Ongoing, 1997-2001

COUNT	REGIONAL PROJECT	END YEAR	START YEAR	GIVEN NAME(S)	LAST NAME	CITIZENSHIP	GENDER	CRSP SUPPORT \1	TRAINING LOCATION \2	DEGREE	DISCIPLINE	LAST KNOWN PROFESSIONAL ACTIVITY/ EMPLOYER

Bunda: Bunda College, Malawi
CINVESTAV: Centro de Investigaciones y Estudios Avanzados, Mexico
CP, Chapingo: Collegio Postgraduado, Chapingo, Mexico
EAP: Escuela Agricola Panamericana, Honduras
FAUCE, Quito, Ecuador
MSU: Michigan State University
SUA: Sokoine Agriculture University, Tanzania
U of CR: University of Costa Rica
UCD: University of California, Davis
UCR: University of California, Riverside
UGA: University of Georgia
UMN: University of Minnesota
UNL: University of Nebraska, Lincoln
UWI: University of Wisconsin

Appendix B

Bean Cowpea CRSP Non-Degree Training Activities (1997-2001)

(See Appendix B.xls)

Training Report: Appendix B

Non-degree Short-term Training Activities Conducted During the Five-year Grant Extension Phase, 1997-2002

Sr. #	Year	Training Activity	Beneficiaries	Total Number of Beneficiaries
GROUP TRAINING				
1	FY 1997	Salifu, Ghana: Training of Trainers	Researchers and Extension staff	60
2	FY 1998	Salifu, Ghana: Training of Trainers	Researchers and Extension staff	62
3	FY 1998	LowenbergDeBoer: West Africa Training Workshop on SAS and PAM analysis (March 1998) at Purdue University	Social scientists	5
4	FY 1998	M. Owusu-Akyaw, CRI, Ghana, Farmers Field School at Cowpea Action Research Site, Ejura, Ashanti region, May-December.	Farmers, Researchers, IPM technicians, and Extension staff	116
5	FY 1999	Cowpea Action Research Site (Ghana)	Farmers, Researchers and Extension staff	106
6	FY 1999	Seed Multiplication Training in Villages in Tanzania	Farmers and Extension Officers	15
7	FY 1999	Peter Graham: Course in Soil Biology and Fertility taught at the Universidad de la Republica	Students	70
8	FY 1999	M. Owusu-Akyaw, CRI, Ghana, Farmers Field School at Cowpea Action Research Site, Ejura, Ashanti region, May-December	Farmers, Researchers, IPM technicians, and Extension staff	109
9	FY 2000	S. Sefa-Dedah, Ghana, Workshop for training health personnel and food processors	Health personnel and food processors	
10	FY 2000	CRI, Ghana, Farmer Field School	Farmers, Researchers and Extension staff	164
11	FY 2000	SARI, Ghana, Walenwale Region, Farmer Field School, Training of Trainers	Farmers, Researchers and Extension staff	153
12	FY 2000	SARI, Ghana, WA Region, Farmer Field School, Training of Trainers	Farmers, Researchers and Extension staff	122
13	FY 2000	INIFAP, Mexico, Training Workshops for Bean Growers	Bean farmers in six diverse communities/counties in the state of Durango	205
14	FY 2000	Training of trainers on diseases and insects for farmer field schools, Ghana.	Researchers and Extension staff	62

Non-degree Short-term Training Activities Conducted During the Five-year Grant Extension Phase, 1997-2002

Sr. #	Year	Training Activity	Beneficiaries	Total Number of Beneficiaries
15	FY 2000	Mabagala: Tanzania: One day course on techniques for testing seed-borne bacterial pathogens and the use of the PCR.	Scientists and technicians	27
16	FY 2000	Bernsten: Farmer Record Keeping Training Workshop (Zamorano, Honduras)	Social scientists	11
17	FY 2000	M. Owusu-Akyaw, CRI, Ghana, Farmer Field School at Cowpea Action Research Site, Ejura, Ashanti region, May-December	Farmers, Researchers, IPM technicians, and Extension staff	115
18	FY 2000	Seed Multiplication Training in Villages in Tanzania	Farmers	12
19	FY 2001	M. Owusu-Akyaw, CRI, Ghana: Farmer Field School at Cowpea Action Research Site, Techiman, Brong Ahafo region, May-August and then September - December	Farmers, Researchers, IPM technicians, and Extension staff	89
20	FY 2001	Jamie Potter (Central America, Guatemala Project) provided 2 months training to personnel at San Carlos University	University students and CRSP collaborators	13
21	FY 2001	Short course on the use of PCR and other biotechnological techniques in improving phytosanitary services in Tanzania	Staff from the Plant Protection Section, Ministry of Agriculture and Food Security	15
22	FY 2001	Seed Multiplication Training in Villages in Tanzania	Farmers and Extension Officers	29

INDIVIDUAL TRAINING

23	FY 1997	Impact Assessment Training Workshop at Clemson (March 1997)	Social scientists	7
24	FY 1997	Visinting Scientists from Haiti and Dominican Republic visited UPR bean field trials	Breeders	2
25	FY 1997	Pablo Guzman, post doc at UC-Davis	Research scientist	1
26	FY 1997	Data analysis training of Augustine Langyinkuo at Clemson University by Jim Nyankori	Student	1
27	FY 1997	Carolina Nolasco (Honduran) at U. Costa Rica	Research scientist	1
28	FY 1997	Molecular techniques training at Wisconsin	Research scientist	1

Non-degree Short-term Training Activities Conducted During the Five-year Grant Extension Phase, 1997-2002

Sr. #	Year	Training Activity	Beneficiaries	Total Number of Beneficiaries
29	FY 1997	Ernesto Luque, Professor, Univ of Narino, Colombia: 3 months training in Rhizobium research techniques at the U of Minnesota	Research scientist	1
30	FY 1997	Michelle Lechtman-9 months training in bean nutrition activities at Michigan State University		1
31	FY 1998	Pablo Guzman, post-doc fellowship at UC-Davis	Research scientist	1
32	FY 1999	Abelardo Vianak, Training at MSU	Social scientist	1
33	FY 1999	Marcelo Guala,.INIAP, Ecuador: 1 month training in Legume inoculant methods and strain testing at the U of Minnesota	Research scientist	1
34	FY 1999	December 1999, D. Maxwell provided 4 days of training on DNA sequence analysis in Costa Rica	Research scientist	2
35	FY 1999	Pamella Brunnell received 3 months of training on geminivirus detection methods at UW-Madison	Research scientist	1
36	FY 1999	Vilmaris Bracero from Puerto Rico received 2 months training on geminivirus detection methods at UW-Madison	Research scientist	1
37	FY 1999	Dogo Seck from Senegal received training on biomonitoring at Purdue	Research scientist	1
38	FY 1999	Annabel Payes-3 months training in bean nutrition activities at Michigan State University	Research scientist	1
39	FY 2000	Training in molecular techniques applied to plant breeding (A. Castro from Honduras at the University of Wisconsin)	Research scientist	1
40	FY 2000	Josias Faria from Brazil provided training to UW-Madison scientists on bean transformation for 3 months	Research scientist	4
41	FY 2001	Josias Faria from Brazil provided training to UW-Madison scientists on bean transformation (6 months)	Research scientist	2

WORKSHOPS

42	FY 1997	1st International Symposium on Common Bacteria Blight of Dry Beans. February 21-24, 1997 Mayaquez, Puerto Rico (A joint activity of PROFRIJOL and the Bean/Cowpea CRSP).	CRSP and other research scientists from the region	40
43	FY 1998	East Africa Workshop on Seed Handling and Multiplication		10

Non-degree Short-term Training Activities Conducted During the Five-year Grant Extension Phase, 1997-2002

Sr. #	Year	Training Activity	Beneficiaries	Total Number of Beneficiaries
44	FY 1999	CRSP-PEDUNE West Africa Workshop (Benin)	Social scientists	12
45	FY 1999	Cowpea Utilization Workshop in Ghana	Research scientists	90
46	FY 1999	Bean Seed Production and Entreprenuer Workshop, Honduras, (July 99)	Seed producers/entrepreneurs	30
47	FY 1999	Bean Seed production and distribution in Central American (Workshop at Zamorano, Honduras	Seed producers/entrepreneurs	20
48	FY 2000	L. Kitch, Cowpea Postharvest Workshop, Zimbabwe		28
49	FY 2000	Bean Stem Maggot Workshop (Malawi)	Research scientists	62
50	FY 2001	Zamorano, Honduras: Genetic improvement of beans and maize in Central America (April 2001). This was a joint activity of the Bean/Cowpea CRSP and a CIAT participatory plant breeding project.	Research scientists	20
51	FY 2001	Murdock: Cowpea genetic improvement workshop, Senegal, Jan 2001	Research scientists and donor representatives	48
52	FY 2001	West Africa cowpea breeders meeting, Purdue, Jan 2001	Research scientists	7
53	FY 2001	East Africa Regional Bean workshop, Arusha, Jan 2001	Research scientists	35

Total Beneficiaries of short-term training **1993**